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EXAMINER	
VIEAUX, GARY	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/030,776	KWON, SO	
	Examiner	Art Unit	
	Gary C. Vieaux	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: on page 3, line 3, the word electrically is misspelled as "electricalally"; on page 5 lines 2-3 contain incorrect sentence structure, specifically "... to the link server 20 to *the* transmit the images to the client computer" (emphasis added.)

Appropriate correction is required.

Claim Objections

Claims 1 and 4-7 are objected to because of the following informalities:

Claim 1 recites the limitation "the required condition" in line 9 of the claim, and the limitation "the compressed picture data" in lines 11-12 of the claim. There are insufficient antecedent bases for these limitations in the claim.

Claim 4 recites the limitation "the picture transmission mode" in line 3 of the claim, the limitation "the client" in line 4 of the claim, and the limitation "the link server" in line 6 of the claim. There are insufficient antecedent bases for these limitations in the claim.

Claim 5 recites the limitation "the image processing unit" in line 2 of the claim and the limitation "the client" on line 4 of the claim. There are insufficient antecedent bases for these limitations in the claim.

Claim 6 recites the limitation "the image processing unit" in line 3 of the claim, the limitation "the client" on line 4 of the claim, and the limitations "the screen of the client monitor" on line 4 of the claim. There are insufficient antecedent bases for these limitations in the claim.

Claim 7 recites the limitation "the image processing unit" in line 3 of the claim, the limitation "the client" on line 4 of the claim, and the limitations "the screen of the client monitor" on line 4 of the claim. There are insufficient antecedent bases for these limitations in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 4 is rejected under 35 U.S.C. 102(e) as being anticipated by Noro et al. (US #6,646,677.)

Regarding claim 4, Noro teaches an electrical transmission method comprising the steps of: determining a picture transmission mode meeting a required condition selected by a client (a control command which necessitates compression, col. 11 lines

27-47); processing a picture to be transmitted (col. 11 lines 42-47; col. 13 lines 44-51); transmitting the processed picture to a link server (col. 13 lines 1-9 and 41-43.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noro et al. (US #6,646,677) in view of Gilbert et al. (US #6,337,683.)

Regarding claim 1, Noro teaches an electrical transmission system for transmitting pictures through the internet, comprising a plurality of cameras (figs. 8 and 13), linked by a server connecting a number of client computers through an internet network (col. 6 lines 40-44; col. 13 lines 1-9 and 41-43); and a computer system compressing image signal of the image captured by the cameras (col. 11 lines 27-47; col. 13 lines 44-51) according to the required condition selected by a client (a control command which necessitates compression, col. 11 lines 27-47) and transmitting (col. 6 lines 38-67) the compressed picture data through a communication network, the picture data being converted into a data format for video communication (col. 3 lines 6-17.) However, Noro is not found to teach or suggest a digital camera assembly having a number of lenses and a number of CCDs (Charge Coupled Devices) for transforming image signal of captured image entered through each lens into electrical signal.

Nevertheless, Gilbert teaches a digital camera assembly having a number of lenses and a number of CCDs (Charge Coupled Devices) for transforming the image signal of captured images entered through each lens into electrical signal (fig. 6; col. 6 line 52 – col. 7 line 28) It is also noted that Gilbert teaches compressing the image signal of the image captured by the CCDs (col. 7 lines 17-28.) It would have been obvious to one of ordinary skill in the art at the time the invention was made for the cameras within the electrical transmission system as taught by Noro, to employ lenses and CCDs as taught by Gilbert. One of ordinary skill in the art at the time the invention was made would be motivated to combine these teaching so that the plurality of cameras could utilize semiconductor technology associated with the CCDs, capable of capturing images, while facilitating simpler incorporation of the electrical signal within the computer system and the entire transmission system, as well are requiring less physical space for the camera assembly.

Regarding claim 2, Noro and Gilbert teach all the limitations of claim 2 (see the 103(a) rejection to claim 1 supra), including a teaching a digital camera assembly which includes a body in the form of beehive and a supporter for supporting the body (fig. 5A), the body being equipped with the lenses and CCDS to capture the image in many directions ('683 fig. 6; col. 6 line 52 – col. 7 line17.)

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noro et al. (US #6,646,677) and Gilbert et al. (US #6,337,683) as applied to claim 1 above, and further in view of Yoon (US #6,335,987.)

Regarding claim 3, Noro and Gilbert teach all of the limitations of claim 3 (see the 103(a) rejection to claim 1 supra), including a teaching by Noro of a system with a control unit for controlling the compression unit according to a picture transmission mode selected by the client (fig. 14 indicator 1206; col. 14 lines 17-21, col. 16 lines 7-42); and a data transmission unit for transmitting the images to the link server to transmit the images to the client computer (fig. 14 indicator 1204; col. 15 lines 5-7.) It is noted that the specifics of the system are related to the second embodiment of Noro which is described in relation to only one camera, but it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the system to include a plurality of cameras as taught by Noro in the first embodiment, in order to implement the image compression described in the first embodiment. Gilbert further teaches an image processing unit for composing each of the images (fig. 9B indicator 86d; col. 9 lines 56-59), prior to transferal and display (col. 9 lines 56-59.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an image processing unit for composing each of the images as taught by Gilbert, with the system as taught by Noro and Gilbert. One of ordinary skill in the art at the time the invention was made would be motivated to include an image processing unit to compose images from a plurality of cameras as a way to further compress images to be transmitted (achieved by elimination of overlapping pixels), while also providing additional viewing perspective created by more than one camera.

However, neither Noro nor Gilbert directly teach a computer system which includes a CDS/AGS (Correlated Double Sampling/Automatic Gain Control) for

removing noise of the electrical signal received from the CCDS and for automatically amplifying and controlling gain to uniformly output despite the level change of the image signal, an A/D converter for converting analog signal input from the CDS/AGS into digital signal, a compression unit for compressing the captured image signal to get a large number of images, and a compression and storage memory for individually storing the compressed images output from the compression unit.

Nevertheless, Yoon teaches a system which includes a CDS/AGS (Correlated Double Sampling/Automatic Gain Control) for removing noise of the electrical signal received from the CCDs and for automatically amplifying and controlling gain to uniformly output despite the level change of the image signal (fig. 2 indicator 30; col. 3 lines 39-43), an A/D converter for converting analog signal input from the CDS/AGS into digital signal (fig. 2 indicator 40; col. 3 lines 44-46); a compression unit for compressing the captured image signal to get a large number of images (fig. 2 indicator 80; col. 4 lines 1-6); a control unit for controlling the compression unit (fig. 2 indicator 60; col. 3 lines 54-63); and a compression and storage memory for individually storing the compressed images output from the compression unit (fig. 2 indicator 90; col. 4 lines 7-9.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the system as taught by Yoon within the system as taught by Noro and Gilbert, in order to process the image signals relating to the images captured by the CCDs (by removing noise, amplifying the gain, and converting the signal to digital), and then compress them prior to their transfer.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Washino et al. (US #5,625,410) in view of Noro et al. (US# 6,646,677.)

Regarding claim 4, Washino teaches an electrical transmission method comprising the steps of: determining a picture transmission mode (fig. 15; col. 5 lines 1-4) meeting a required condition selected by a client (col. 8 lines 49-52) and processing a picture to be transmitted (col. 8 lines 49-52.) However, although Washino teaches transmitting the processed picture via a network (fig. 11; col. 9 lines 1-15), Washino does not directly teach transmitting the processed picture to a link server.

Nevertheless, Noro teaches transmitting pictures to a link server (col. 13 lines 1-9.) Given the teachings of Noro, it would have been obvious to one of ordinary skill in the art at the time the invention was made to transmit the picture to a link server, as part of the electrical transmission method taught by Washino, as a way to implement an internet network, thereby expanding remote location possibilities of the PC based system taught by Washino.

Regarding claim 5, Washino and Noro teach all of the limitations of claim 5 (see the 103(a) rejection to claim 4 supra) including wherein the transmission method includes the step of transmitting the pictures, individually separated by the image processing unit according to the required condition selected by the client, onto a screen of a client monitor in division ('410 figs. 1 and 15; col. 5 lines 1-4.)

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Washino et al. (US #5,625,410) and Noro et al. (US# 6,646,677) as applied to claim 4 above, and further in view of Judd et al. (US #4,890,314.)

Regarding claim 6, Washino and Noro teach all of the limitations of claim 6 (see the 103(a) rejection to claim 4 supra), except wherein the transmission method includes the step of transmitting the pictures, partially composed by the image processing unit according to the required condition selected by the client, onto the screen of the client monitor. However, both Washino and Noro teach the transmission of pictures onto the screen of the client monitor ('410 fig. 11; '677 col. 7 lines 20-37.)

Nevertheless, Judd is found to teach an image processing unit (fig. 2 indicator 16) which composes pictures based on multiple camera images (fig 2; col. 2 lines 32-44.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the composition method of Judd involving two camera images, to two of the images to be transmitted onto the client monitor using the transmission method as taught by Washino and Noro. One of ordinary skill in the art at the time of the invention would have been motivated to compose two of the images, in the situation where two cameras capture adjacent images, to create one seamless, high resolution, wide-view image.

Regarding claim 7, Washino and Noro teach all of the limitations of claim 7 (see the 103(a) rejection to claim 4 supra), except wherein the transmission method includes the step of transmitting the pictures, generally composed by the image processing unit according to the required condition selected by the client, onto the screen of the client

monitor. However, both Washino and Noro teach the transmission of pictures onto the screen of the client monitor ('410 fig. 11; '677 col. 7 lines 20-37.)

Nevertheless, Judd is found to teach an image processing unit (fig. 2 indicator 16) which composes pictures based on multiple camera images (fig 2; col. 2 lines 32-44.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply general composition of the multiple images as taught by Judd, onto the client monitor using the transmission method as taught by Washino and Noro. One of ordinary skill in the art at the time of the invention would have been motivated to transmit the generally compose the pictures onto the screen of the client monitor, so that the images captured by the mode designated by the client could be displayed as one seamless image. The Examiner notes that the composed image of Judd is based on two captured images and the example originally provided by Washino involves four images, but the Examiner further notes that Washino allows for other possible combinations of arrays ('410 col. 3 lines 12-14), which is clearly seen to include an array of two images.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary C. Vieaux whose telephone number is 703-305-9573. The examiner can normally be reached on Monday - Friday, 8:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gary C. Vieaux
Examiner
Art Unit 2612

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